DOCUMENT RESUME

ED 056 421 08 EA 003 979

TITLE	Innovative Development of Course Content and Delivery.
INSTITUTION	Career Options Research and Development (CORD), Chicago, Ill.; YMCA of Metropolitan Chicago, Ill.
SPONS AGENCY	National Center for Educational Research and Development (DHEW/CE), Washington, D.C.
BUREAU NO	BR-7-0329
PUB DATE	Sep 71
GRANT	OEG-0-8-070329-3694
NOTE	20p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Career Ladders; Core Curriculum; Course Content; *Curriculum Development; *Curriculum Research; *Educational Objectives; Job Analysis; Models; *Systems Approach; *Task Analysis

ABSTRACT

Two new tools useful in curriculum development are the systems approach and functional job analysis. Functional job analysis defines the exact tasks of a specific job or occupation, restructures the tasks if necessary, states performance criteria for each task, and identifies the training and knowledge necessary for task performance. The systems approach enables an organization to (1) measure its effectiveness in meeting goals, (2) organize its resources within specified time periods, and (3) respond to the changing needs of the environment. Course content can then be determined by the knowledge and training needs of an organization and tempered by an organization's resources and constraints. A related document, EA 003 792, presents a model curriculum for human services occupations. (RA)

INNOVATIVE DEVELOPMENT OF COURSE CONTENT AND DELIVERY

ED056421

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September 1971

EA 003 979

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CAREER OPTIONS RESEARCH AND DEVELOPMENT, Project No. 7-0329, was supported by the U.S. Office of Education, National Center for Educational Research and Development, Department of Health, Education and Welfare, under Section 4(c) of the Vocational Education Act, 1963, in a grant to the YOUNG MEN'S CHRISTIAN ASSOCIATION OF METROPOLITAN CHICAGO, 19 South LaSalle Street, Chicago, Illinois 60603.

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as a supporting Advisory Document to the Final Report for the three-year project, 1968-1971.

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INNOVATIVE DEVELOPMENT OF COURSE CONTENT AND DELIVERY

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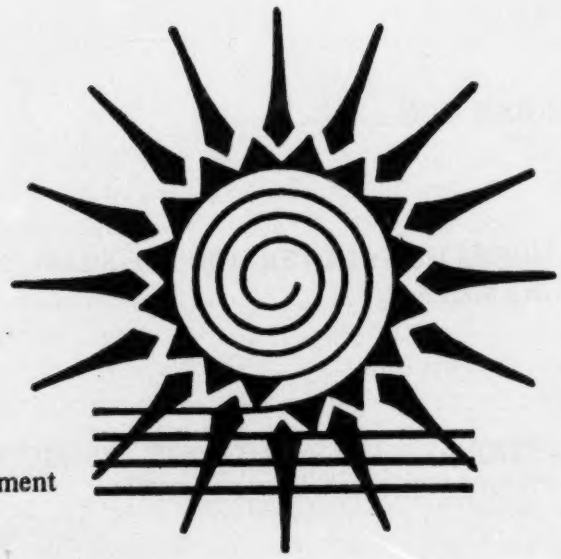

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INTRODUCTION

The purpose of this report is to acquaint the reader, insofar as possible, with a major new method of curriculum development and with the model human service curriculum which evolved from it. This method of curriculum development was tested in a model program in Chicago under the auspices of Career Options Research and Development and funded by the U.S. Office of Education. Experimentation and research with the new method was conducted wholly in the area of what is now referred to as "human services." Over nineteen human service agencies as well as the City College of Chicago, Central YMCA Community College, Prairie State Junior College, and Thornton Junior College participated in one or more phases of the research and evaluation of the method and the resulting model curriculum. By designing courses of study according to this method, new life and relevance can be brought into the classroom. Although our efforts were focused on the area of human services, this method can be equally well applied (with modifications) to other fields of knowledge and areas of human inquiry.

When we speak of the human services, we refer not only to the social services (*i.e.*, casework, group work, and community organization), but also to developing areas such as school-community representation, corrections, mental health, physical health, environmental protection, consumer protection, and so on. At the start of our research in 1968, some of these new areas had not yet appeared, while others were on the horizon but had not then developed to their present level of popularity. The main thrust of our research work began in those more traditional areas of the so-called social services, but thanks to our research methods, we quickly became aware that this scope would be too narrow, that new fields of work and new subject matter in education had to be developed in order to meet the many needs that we were able to identify. Through these methods of research, we were able to predict what was to come, and thus were able to develop the resources to meet the projected situation when it arrived.

This paper will discuss and describe in some detail this new method of curriculum development. However, because of the nature of this method and its implications, our discussion will be concerned with much more than just the sphere of education. Perhaps through our efforts, the techniques herein described will find more common use and universal application.

CONSIDERATIONS GOVERNING THE SHAPE OF CURRICULUM

If we trace education back to the time of the Romans, we find that the original sense of the word *educate* sprang from the words *e,* meaning "out from," and *duco!ducare* , meaning "to lead." Hence, *educare,* meaning "to lead out from" or "to draw out." Plainly this older concept of *education* represented a *drawing out* of the possibilities or potentialities of the one educated.

This Roman concept of education stands in contradistinction to the prevalent view held in industrialized, mechanized America in which education is a process whereby skulls are opened up and knowledge is poured in according to a prescribed formula called curriculum, the pouring being done by the possessor of the knowledge, the teacher. This latter concept of education as practiced in America has rendered the student nothing more than a passive receptacle and so has rigidified the minds of more than one generation (perhaps making this one of the primary sparks to ignite the contemporary wave of campus unrest).

In ancient Rome only the wealthy ruling class had the benefit of education; and the purpose of this education, this drawing out of possibilities, was to prepare the young of the ruling class to rule. The curriculum was first and foremost functional and relevant. Rhetoric was taught not only because it was felt to be a constructive mental exercise, but because life for the ruling class meant politics, and rhetoric was the prime art and tool of political life. Other elements in a Roman curriculum predictably dealt with the martial arts, economics, management, physical development, philosophy, and the various fine arts. Each of these subjects could be expected to play a crucial role in the life of any Roman patrician, and it requires no great imagination to understand why. From the martial arts which provided for continuous defense and expansion of the republic and later the empire, to the various arts which gave the ruling class refinement, knowledge, and the ability to rule, all elements fulfilled a useful function, and all elements were relevant to the time, the place, and the physio-social environment.

With the advent of the Dark Ages, learning and education also fell on dark days. In the West, the learning that survived did so mainly because of the good offices of the Church, which became the main institution charged with

* See Decline and Fall of the Roman Empire. Modern Library Edition.

the education of the religious and secular elite. The curricula of the times reflected the times. Besides being severely restricted in subject matter, curricula were divided between mystical pursuits and mundane ones. Though more narrow than in Roman times, education was still relevant, functional, and the property of the elite.

In modern times a new concern took hold of education. This concern was born out of a recognition and dread of the Dark Ages through which man had passed. The new historians, such as Gibbon in the eighteenth century, concluded that mankind had lost heavily with the destruction of Rome, and that even though men had once again attained the heights of civilization, there was never more than a hair's breadth separating the painfully won new civilization from another dark age that might be brought on by the incursion of barbarian hordes into the civilized areas of the world.* Out of this way of thinking grew elements in education that were aimed at preserving western civilization should catastrophe strike. Students were taught all the finer aspects of civilized living and sophisticated knowledge in order that they should be able to reconstruct civilization if the worst once again befell western man.

In modern America a series of new elements were introduced into education as a result of the concept of universal schooling: *everyone* had to be taught the same subjects. Moreover, industrialization and the growth of professional societies fostered petrification, and a definite rigidity began to envelop the educational institutions of the country. Curricula were designed on old traditional models because those models had been used by previous generations, and because those traditional bodies of knowledge and their arrangements had seemed to serve well up to the present. Curricula were based on foggy notions of what was reputed to be good, on long-standing myths about what people really needed to know to get along, and on the opinions and guesses of "professional educators," a group that had grown to control the educational institutions and other organs of learning.

At least one major constraint figured very heavily in the curriculum building process. This constraint developed from the desire of professional societies, pressure groups, and the government to use curricula as valves and gauges for monitoring and controling the flow of educated persons and new professionals into various markets and fields. The primary purposes for such control seemed to be the maintenance of prestige, power, professional status, and wealth, and the concommitant prevention of radical change within the domains of the professional societies and within the nation as a whole.

Professional societies represent the new elite. Education has come to exist for their benefit, and so curriculum building is largely a process designed to serve the ends determined by that new elite. In one sense, this does not represent an appreciable change from more ancient times. But unlike ancient times, the emphasis is now placed upon selection by elimination rather than selection by superior education. Moreover, selection is based on conformity to tradition rather than on excellence.

The result of all this has been to create a great gulf between the controllers of curricula–educators–and the victims of curricula–the students. Then, too, education has tended to lose its relevance. In Roman times, education was appropriate to the needs and aspirations of Roman times. In Medieval times, education was still appropriate to the lives and experiences of the people of those times. But education today seems to suffer from a case of arrested development. Educational institutions and their curricula tend to reflect the eighteenth and nineteenth centuries more than the twentieth. This arrested development can be seen in the bodies of knowledge that are offered and in the methods by which these bodies of knowledge are taught. Arrested development is the logical result when a powerful educational elite, that has a high investment in traditional methods, contents, and approaches, is allowed to select and determine curriculum unchallenged.

Of course, education does require that attention be given to the need of a civilization to extend, perpetuate, and regenerate itself. Even today, processes that more than once buried past civilizations in a morass of darkness can again reach up to claim even this lofty technological one. But more than this, education also requires that the knowledge imparted be relevant to the times, and that the learning process be an active one on the part of the students, with a positive orientation and an equal opportunity for sharing in the control of that process. In order for change to come about in education, the people who presently control education must change. Yet whether they will change or not, change will come, if need be, by the alternate route of total rejection by the consumers of the controllers and their processes. We can see this alternate route already being taken. Under the pressure of total rejection, those who have the power must seek to fathom the causes and make some adjustments and accommodations. If adjustments turn out to be more of the same action that sparked the revolt, the efforts will fail and the rejection continue.

Now we come to the crux of the matter. Great changes are needed in our methods of curriculum development; but *what kinds* of changes, and *how* can they be accomplished? Before dealing with these questions, let's

examine the traditional approaches to curriculum development, for that activity is the process which provides the educative formula and content and suggests the methods of delivery to be used.

TRADITIONAL WAYS OF BUILDING CURRICULA AND DERIVING COURSE CONTENT

At the outset, we must keep in mind the fact that all curriculum development has been in the hands of either an educational, professional, or governmental power elite--usually some combination of all three, for they are neither distinct nor mutually exclusive. This is neither more or less true for universities than it is for public and private elementary and secondary schools. This fact is not necessarily bad, but it is frequently not good, because one of the first duties of a power group is to preserve and perpetuate itself. The easiest way to do this is to restrict the distribution of power, freeze the relationships and structures that exist in a society, and in all other ways act so as to prevent or severely curtail any significant change. This is, in all respects, an unhealthy situation, as much so to a total society as it would be to a living organism.

Curriculum development is a powerful means whereby the flow of educated personnel may be monitored and controlled like a valve and guage, alternately opening and closing or redirecting, but at all times indicating. It is also a tool for the creation and maintenance of a power elite, dictating as it does the only portals of entry to the elite structure, as well as establishing the times and conditions of entry.

Curriculum development is furthermore a device for restricting change, since it permits the withholding of knowledge and credentials as being the proper domain, affair, and property of an exclusive body of society, and because it charges with initiating, directing, and controlling change those people who have least reason to want change and know least about how to accomplish it. This last feature is perhaps the most destructive aspect of the present educational situation. The existence of an elite is not, in and of itself, a problem, since there is a natural tendency in societies for an elite to develop. But when such an elite loses its positive orientation and seeks to stifle evolution, growth, and change, the situation becomes unbearably destructive.

If curriculum development is the tool, ambiguity and confusion is the context of operation for that tool. Curriculum development is traditionally conducted as an almost mystical process that does not permit much objectivity or standardization. New curricula emerge mystically out of old,

in ways governed by the laws of tradition and accepted practice, and presided over by specialists and professional educators who somehow "know best" but somehow just cannot spell it out. Curriculum development in the United States has been very tradition-oriented because the people charged with it have been the products of traditional schooling; and what guidelines there are for curriculum development were themselves established by tradition and accepted practice.

A possible starting point for the curriculum development process is suggested by R.W. Tyler in his syllabus "Basic Principles of Curriculum and Instruction." Tyler identifies four questions:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?

These are, on the one hand, very sound questions and represent a very estimable approach, but the process of curriculum development goes awry when applied traditionally. Why? To see why one need only ask this next set of questions and then explore a process. The questions are:

1. Who determines purposes and goals both for the educational process as a whole and for a curriculum in particular?
2. How are these determinations of purpose arrived at and fixed?
3. If the purposes and goals are questionable, are the educational experiences by which these goals are attained also open to doubt?
4. Who determines these educational experiences?
5. For whom are these experiences determined? To whom are they directed?
6. Do those who are to be educated have any influence, either individually or collectively, on the kind of education they receive?
7. Who determines what is effective organization of educational experiences?
8. For whom and to what purpose is such organization effective?
9. When is any effect considered effective?
10. How indeed can we determine whether or not these educational purposes and goals are being attained?
11. How can we determine if these purposes *should* be attained?
12. Who is "we"?

The process we will explore is that which might be called "the standard

technique of curriculum development." This is a traditional process which involves people who hold traditionally established powers and which manifestly does *not* involve the consumers of education. As has recently been the case, some concessions have been made by the established powers, and token participation in curriculum development is permitted to the consumers. But these consumers, by such tokenism, are given no effective tools or techniques with which to truly participate in curriculum development or permit their participation to have any unique impact. This represents only one of the very real handicaps of developing curriculum by traditional methods. There are a great many other handicaps, and these bear some fuller examination, as well as a spelling out of the traditional process itself.

PROCESS AND PROBLEMS

Traditional methods of curriculum development usually involve the assembling of some sort of panel or committee, composed primarily of faculty members of the affected department(s) or other specialists in the field(s) needing curriculum development.* This committee is empowered to study, evaluate, and build a new curriculum. The work of this group may be supplemented from time to time by some sort of "curriculum specialist" The group then meets at various intervals over a period of time, which may be as long as one or two years. In time, this committee arrives at a mutually agreeable curriculum design which is then either accepted, modified and accepted, or rejected by whoever has the authority to take such action.

Such committees for curriculum development usually rely very heavily upon (1) the experiences and practices of leading schools in the subject matter field under consideration, (2) the customs and myths prevalent in that field, and (3) the needs, values, and knowledge of the committee members themselves. Except for myths, all of the foregoing are probably valid as influences on the development of a curriculum. Yet, when these are the *principal* determinants of a curriculum, many problems arise that can only be effectively solved by the use of some other approach to curriculum development.

One problem that arises is that the value of a curriculum arrived at in the traditional manner will depend heavily on the breadth of knowledge, understanding, and experience of individual committee members and not on

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* Basic Principles of Curriculum and Instruction. Ralph W. Tyler. University of Chicago Press: Chicago & London, 1949, p. 126.

much else. At first this may not seem to be a problem–but it is, if the faculty resources of the school are limited, or if the faculty has been long out of contact with the conduct of activities in a wide variety of agencies who will employ their students. On an inter-school competetivebasis, smaller schools will have more difficulty developing a good curriculum by the traditional method, and will tend to be less competitive with larger schools for students and resources.

To cite another problem, the end result of the committee's work depends, to a large extent, on its knowledgeability and familiarity with curriculum building and application. There are factors in devising a curriculum that have to do with the process of curriculum building alone. If the committee members have had no previous experience in curriculum building, the results may be very original and outstanding, but then again, the results may be quite mediocre or just plain unworkable. The problem becomes one of how best to guarantee a top-quality output. As a result of this problem, smaller schools may be in a disadvantageous position relative to larger schools.

Working under the pressure of the first two problems, curriculum committees in many smaller schools may simply imitate curriculum patterns adopted by the "leading" and frequently larger institutions. This may be very flattering for the larger schools, but somewhat risky for the smaller ones. No satisfactory method has been devised to determine what makes a "leading school" a leading school, other than heresay and professional superstition. For example, on the West coast, the aircraft industry rated West coast schools (Stanford, UCLA) above East coast schools (MIT, Harvard, Princeton); while on the East coast, local industry considered just the opposite to be true. In the Midwest, the University of Chicago considered itself second to none.

Yet another problem presents itself. With the traditional curriculum development techniques there is no fast or accurage way of evaluating the curriculum, either for its ability to excite student interest or for its relevance and applicability to the work which the students will do when they leave school. A good curriculum on paper, or from the standpoint of the adademic setting, may prove somewhat less than interesting and much less than relevant from the standpoint of the student, the employer, and the job. In many Social Services curricula, a featured course may be the "History of Social Service"; or in Corrections curricula a featured course may be the "History of Correctional Institutions." In both instances these cqurses have only questionable value for the students who take them and also work in social service or corrections.

Still another problem rests in the fact that traditional methods of curriculum building are non-uniform. Quantitative and qualitative aspects of particular curricula may vary widely from school to school. The result is that schools have no accurate way of determining or defining what other schools are really doing. This means that each school has to negotiate with every other school on credit transferability for its students. In this process, some schools and students are penalized while others are favored, often for very insignificant and unjust reasons. To minimize this difficulty, many schools adopt the same or similar course and general topic headings, regardless of ofttimes wide variation in the course contents under those headings. The "leading" schools usually establish the headings and the others follow suit. Under these conditions, there is no way of accurately defining what has been taught and what has been learned, or what minimum function a student should be able to fulfill as a result of what has been learned. A final problem rests in innovation. Traditional techniques offer very little in the way of theoretical or factual foundation upon which curriculum developers can base their decisions and around which they can organize their innovative ideas and efforts.

NEW TECHNIQUES: THE SYSTEMS APPROACH AND FUNCTIONAL JOB ANALYSIS

Through the Systems Approach and Functional Job Analysis, the traditional job of curriculum development can be done from the basement up, and the aforementioned problems may be overcome. The Systems Approach is an instrument for recasting an organization or an activity in such a way that it would thereby be able to do the following: (1) measure its own progress and effectiveness in attaining well defined purposes, goals, and objectives; (2) organize its resources, knowledge, and efforts within specific time fences; (3) respond flexibly to the changing needs of the environment in which it operates.*

The Systems Approach is only the first instrument to be utilized in developing a new curriculum. The second tool is that of Functional Job Analysis. This is a process whereby the jobs performed by any set of individuals may be analyzed, described, and defined with precision into discrete units, known as *tasks*. Both tools are, of course, used in support of

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This definition is substantially that of Dr. Sidney Fine, one of the foremost authorities in the field of Systems Research and Manpower Utilization. Dr. Fine's various publications may be obtained from the W.E. Upjohn Institute, Kalamazoo, Michigan.

one another. Functional Job Analysis enables an organization to: (1) specifically and exactly define what job needs to be done; (2) restructure any job for any reason as necessary; (3) clearly define the performance standards for each task in a job, and hence for the job itself; (4) identify the in-service and academic training components necessary for that task and job; (5) identify knowledge areas and levels of academic attainment necessary to prepare a person to do the job.

The need for a new curriculum may come about in many ways. It may arise from a school's need to update its own course offerings; or it may arise from a specific agency or group of agencies requesting a training and educational program for their personnel. It may also arise from the demands and protests of students for courses that have some relevance to the problems and situations which they face in the present world. However the need arises, it is bound to produce in the school at least some desire to formulate a truly useful and hopefully relevant program. This desire will doubtless not be unopposed, since factors of control and prejudice will tend to act as retraining influences. Even so, if such opposition can for a time be overcome, then the affected department(s) may employ the Systems Approach and Functional Job Analysis to good advantage in developing a curriculum and an approach to education relatively free of the problems described earlier. Schools, agencies, and students are all called upon to cooperate in this process which must ultimately benefit all of them, but it is the school, and more specifically the curriculum committee, that must use these tools.

The process may begin in any one of several ways. It could begin with the school administration reorganizing the necessity for some curriculum development. A curriculum committee would then be created, with a proportionate number of student representatives who will function on a par with faculty members and others. The first act of this committee is to decide to formulate the new or modified curriculum as a system aimed at achieving some ultimate end, which would be known as the *System Purpose.* The committee then writes an exact statement of that purpose. Beyond the student, faculty, and administrative committee members, it may be desireable to involve employer agencies in this initial decision-making process. It may be undesireable to involve official representatives of professional organizations in the affected field(s), unless these people are noted for their openness and flexibility, for they may otherwise tend to impede the process.

It should be kept in mind throughout this phase of activity that not only

the curriculum, but also the school and contributing agencies, may be visualized as a system either in whole or in part. Such visualization can be done with considerable profit, but whether it is done will depend upon the time, financial resources, and scope of the committee. The profit may be found in the fact that this visualization would lead to clarified roles and jobs within both schools and agencies. The visualization of schools and agencies as systems would permit a clear statement of purposes, goals, and objectives for both, with the consequence that they would be better able to: (1) organize their work and resources; (2) plan and identify what social role they can and should play; (3) coordinate their efforts in some cooperative and mutually supportive way.

Any system may be made a part (sub-system) of a larger system. A curriculum, for example, can be formulated as a system, which in turn might comprise one contributory part of a larger functioning unit, such as the department or school. If any non-academic agencies collaborate with the curriculum committee, the committee should combine the results of this collaborative effort with its own specific desires into a general comprehensive purpose which clearly states in *well defined* terms the *ultimate end* of the curriculum. The statement of purpose should clearly and unequivocally indicate three things: (1) the system direction–a statement detailing the aims toward which the curriculum will strive; (2) the system criteria and standards–a statement detailing the devices by which the system's progress toward and achievement of its purpose can be measured (this should include a time factor); (3) the system resources–a statement detailing those elements of money, time, facilities, people, and materials which will be used to achieve the purpose.

Subordinate to and supportive of the purpose will be a set of intermediate ends, which are called *goals.* Goals are those ends which, over a moderate expanse of time, must be met in order to fulfill the long-range purpose. Each goal must be stated clearly and precisely, and like the statement of purpose, must provide direction, criteria, and indication of resources. If the achievement of a specified kind of curriculum with particular attributes is the purpose, then the goals could be such things as conducting a Functional Job Analyis study to provide data; analyzing the data to facilitate derivation (this being the identification of performance standards and knowledge areas), course derivation, and accumulation of supportive materials; recruiting of instructors; selecting and preparing students; establishing an internal evaluation system; and so forth. The foregoing does not represent an exhaustive list, nor are the phrases proper goal statements. A proper goal statement would be: "To conduct over a period of R months a functional

Job Analysis study on all jobs within agencies X, Y, and Z, using teaching staff members of the college with agency administrative cooperation in order to obtain complete task data for future course derivation." This statement provides direction, establishes criteria, and indicates resources necessary to its accomplishment.

At the same time that the goals are defined, the conditions and limitations (constraints) operative within the environment and upon the system should also. be listed in order that there may be some way of verifying how effectively these limitations are being dealt with.

Just as each purpose (or ultimate end) creates several intermediate goals that must be accomplished in order to fulfill that purpose, so each goal (or intermediate end) results in a set of *objectives* (or immediate ends) which must be reached in order to accomplish that goal. Objectives must also provide direction, criteria, and resources, but of a much more specific sort than for goals. Objectives must specify the "immediate result to be accomplished within a defined (1) period of time, (2) budget, (3) manpower supply, (4) place, and (5) client population."* In each case where time intervals and ends are specified, it must be remembered that the immediate, intermediate, and ultimate determinates are all relative, and that the relative standard is the purpose. If five years are needed to achieve the purpose, the goals may take one, two, or three years, while the objectives may take only a few months or perhaps a year.

Earlier, particular kinds of goals necessary in developing a curriculum were listed and one model goal statement was provided. This model dealt with the performance of a Functional Job Analysis study on a set of agencies. The number and kinds of agencies depends on the kind of curriculum which is desired. As a general rule, the broader the range of agencies and agency services, the better grounded and more widely applicable will be the curriculum. Also, the more numerous the different kinds of jobs studied, the more detailed and deep will be the final curriculum product. These two points are especially important to the student, whose later job mobility and ease of job transferability will either be enhanced or retarded to the extent that these rules were applied in developing his school curriculum.

Functional Job Analysis is the name given to a particular way of analyzing a job being performed by a single individual. It must be emphasized, however,

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* A Systems Approach to Job Design and Manpower Utilization. Sidney A. Fine, Workshop Director, W.E. Upjohn Institute for Employment Research, 1969.

that *what gets analysized is the job, not the person doing the job.* Those performing job analysis for the first time will have to pay particular attention to this, since there is a strong tendency to identify the person with the job. If the person is analyzed instead of the job, the collected data will be seriously skewed by the introduction of emotional elements which have no place in the analysis. The purpose of the analysis is to define the job with precision by analyzing the job into discrete elements, known as *tasks.* The analysis of a job into tasks provides useful data for curriculum development. When a job is analyzed, care must be exercised to avoid either under-analyzing or over-analyzing it. Let us say, for example, that a person has a job title of Case Worker I. One task for such a hypothetical Case Worker might be: "Talks to clients in order to obtain basic background information such as age, educational experience, employment history, and family status." If this task were underanalyzed, it might be stated as: "Interviews clients." The fault of this analysis is that it does not differentiate between different kinds and modes of interviewing, and does not specify the reason why such interviewing takes place. An important rule to follow in constructing a proper task statement is to say *precisely* and *exactly* what the task is, avoiding any vague or imprecise language, to make sure that any specialized instruments or techniques that are used are also precisely indicated, and to be sure that the reason for the task is clearly stated. If the task were over-analyzed, it would be stated as if it were many tasks, for example: "Asks the client how old he is. Asks the client how many years of school he finished. Asks the client. . ." All of these questions would be asked in order to complete the interview format, but the analysis is, in this instance, too fine. Over-analyzing can be avoided by posing the question: Would it be reasonable or practical to divide these operations or tasks among many different people? If the answer is no, then the task has probably been over-analyzed.

In analyzing a job into tasks, it is also useful to know what objective the task, or any set of tasks, is trying to accomplish. When this is known, it is possible to say for any given task what must get done in terms of objectives, goals, and purposes. Then the task statemtn can be written in terms of what operations must be performed to accomplish "what must get done." From the task statement, performance standards, or the criteria by which adequate performance of the task may be measured (qualitatively and quantitatively), should be deduced. Then from all of these elements, the training and educational content which must be provided in order to enable a worker to perform the task up to standard can be specified.

The training and education content may be divided into general or functional skills (*e.g.*, interviewing techniques) and specific or specific-content skills (*e.g.*, which agency forms to use and when). The general skills are those which are best taught in the school, while the specific skills are those best taught in on-the-job training programs. A further step is to rate the level of instruction provided against a scale to indicate what the worker does with people, data, and things, and what General Educational Development (GED) is necessarry to adequately perform the task.*

Once the jobs within various agencies have been analyzed into tasks and the various information extracted, one complete goal in the purpose of building a curriculum is accomplished. Before leaving that topic, a few more points need to be made. No agency will be found having a purely rational structure, consistent job titles, or completely accurate job descriptions and definitions. This places a heavy burden on the people performing the job analysis. They will frequently be discovering definition where there never was any, and they will be bringing precision into areas where only confusion and nebulousness existed before. They will need the help of agency administrative personnel, who will frequently be frightened of the results of the processes for which their help is needed. Job titles (such as Case Worker I) will vary from agency to agency and will be a very poor indicator of not only what must get done and what is done, but also of what it is possible to do.

Out of the many other goals related to curriculum development one other deserves special attention here. That goal relates to how the collected data may be organized into courses. Let's say that the general knowledge skills have not been separated from specific skills. All the general knowledge skills collected on all tasks for all jobs studied, define the area for the school's curriculum. If the spectrum of agencies and services has been wide, then a broad, very representative collection of knowledge skills will be the result. Considerations of time, economy, level of instruction required, faculty resources available, and similarity of subject matter will provide the basis for sorting the knowledge areas (based on the skills needed) into clusters which, with further polishing and sorting, may be turned into courses.

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* Guidelines for the Design of New Careers. Sidney A. Fine. September, 1967.
Use of the Dictionary of Occupational Titles to Estimate Educational Investment. Sidney A. Fine. Reprint from The Journal of Human Resources, Vol. III, No. 3, (Summer, 1968).

Which of the considerations listed above will be deemed more important should be left up to the school. However, it should be pointed out that much economy can be gained at this point by forming the right combinations of knowlege areas, for example, putting similar pieces together in one course rather than scattering them through many courses. Also, much innovation is also possible at this point while still maintaining economy and saving time.

When these knowledge areas have been pulled together around some organizing principles, what results is not a complete curriculum, but a body of well-defined courses which form a core curriculum. These core courses have a guaranteed relevance to life and the work that the students will later do. They will have a payoff in job applicability. Moreover, the school will be able to spell out with precision what they have taught their students and what, as a minimum, their students are capable of doing. The courses and student accomplishments can, in turn, be more precisely evaluated by using the tasks as an evaluation base.

Still more remains to be done to complete the curriculum, but it will prove more easily done because of the Systems Approach. In the process of analyzing the job field, the school has been able to specify and define what is actually being done on the job. By putting this into courses, it is possible to define a portion of a curriculum, maintain curriculum relevance, and develop a defensible rationale and method. Having made this contribution, the school can make another one, still greater and quite proper to the theorectical base of learning. Having *seen precisely what is being done on the job*, and being aware of what problems remain unsolved and needs unmet in the field, the school has a solid foundation on which to recommend in task-oriented terms precisely what should be done. By framing "what should be done" in such a way as to deal with the unmet needs and by integrating these elements with those obtained from the field, the school can formulate a core curriculum which is not only relevant to the present, but also to the future, because the students will be prepared to perform tasks that need doing but which are not presently being done. By framing this new input as tasks, the uniformity and precision of the resulting courses are guaranteed, and advantages arising from building a curriculum using Functional Job Analysis may be preserved.

To round out the total curriculum, one detail remains: What is the best way to preserve, extend, and continue the culture and civilization by acquainting the students with its richness in art, literature, and science? Courses created out of this consideration form the general component of the students' education, but these can also be made relevant to the core curriculum and

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can be defined in a format similar to tasks, a process too lengthy to be considered here.

This is the method by which a curriculum is developed using the Systems Approach and Functional Job Analysis. The method has the advantage of providing a definite technology with guaranteeable results in an area which, up to this time, has lacked both of these things. This method provides avenues for introducing relevance, precision, and innovation into curriculum development in the human services and in other fields as well. However, as a method, it must be adjusted to the particular circumstances of the school or department which uses it. Adequate preparation must be given to all individuals who perform the various steps in the method. If this is not done, much difficulty will be encountered which might be blamed unjustly on the method itself. If adequate preparation is given and care exercised, the results obtained should be of great satisfaction to all involved both in the schools and in the agencies.